

## CLAIMS

What is claimed is:

1. A protective coating, comprising:  
a base compound;  
5 a plurality of shape memory alloy (SMA) particles dispersed in said base compound; and  
wherein said SMA particles enhance a physical property of said coating.
- 10 2. The coating of claim 1, wherein said SMA particles comprise a diameter of between about 50 microns and about .005 microns.
3. The coating of claim 1, wherein said SMA particles comprise NITINOL® alloy particles.
- 15 4. The coating of claim 1, wherein said NITINOL® alloy particles are shaped in accordance with at least one of the shapes from the group comprising: a sphere; an oval and a cylinder.
- 20 5. The coating of claim 1, wherein said SMA particles comprise granules that are randomly dispersed within said base compound.
6. The coating of claim 1, wherein said SMA particles comprise at least about 1.0% by volume of said base compound.
- 25 7. The coating of claim 1, wherein said SMA particles comprise between about 1.0% and about 50% by volume of said base compound.
8. The coating of claim 1, wherein said SMA particles are dispersed  
30 randomly and uniformly throughout said coating.
9. The coating of claim 1, wherein said coating comprises a paint.

10. The coating of claim 1, wherein said SMA particles comprise NITINOL® alloy particles in their martensitic phase.

5           11. The coating of claim 1, wherein said SMA particles comprise a NITINOL® alloy particles in their austenitic phase.

12. The coating of claim 1, wherein said SMA particles have a size comprising at least about 50 microns.

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13. The coating of claim 1, wherein said SMA particles have a size of no more than about 0.005 microns.

14. A paint having enhanced impact resistance, comprising:  
a base paint;  
a plurality of shape memory alloy (SMA) particles distributed in said  
base paint; and  
5 wherein said SMA particles operate to improve an impact resistance of  
said base paint.

15. The paint of claim 14, wherein said SMA particles comprise a  
diameter of between about 50 microns and about .005 microns.

16. The paint of claim 14, wherein said SMA particles comprise  
NITINOL® alloy particles.

17. The paint of claim 14, wherein said SMA particles are distributed  
15 randomly and generally uniformly throughout said base paint.

18. The paint of claim 14, wherein said SMA particles comprise a  
shape in accordance with one of a group of shapes comprising: a sphere; an  
oval; and a cylinder.

19. The paint of claim 14, wherein said SMA particles comprise at  
least about 1.0% by volume of said base paint.

20. The paint of claim 14, wherein said SMA particles comprise  
25 between about 1.0% and about 50% by volume of said base paint.

21. The paint of claim 14, wherein said SMA particles comprise  
granules interspersed randomly throughout said base paint.

22. The paint of claim 14, wherein said SMA particles comprise  
30 NITINOL® alloy particles in their martensitic phase.

23. The paint of claim 14, wherein said SMA particles comprise NITINOL® alloy particles in their martensitic phase.

24. The paint of claim 14, wherein said SMA particles comprise a  
5 size of at least about 50 microns.

25. The paint of claim 14, wherein said SMA particles comprise a size of no more than about 0.005 microns.

26. A protective outer coating adapted to applied in a liquid form to an outer surface of a component, said protecting coating comprising:

a flowable base compound;

a plurality of NITINOL<sup>®</sup> alloy particles interspersed randomly and  
5 uniformly throughout said base coating ;

said NITINOL<sup>®</sup> alloy particles being provided in one of said austenitic and martensitic phases; and

wherein said NITINOL<sup>®</sup> alloy particles serve to improve an impact resistance of said base paint without negatively impacting an ability to apply  
10 said protective outer coating to said outer surface of said component.

27. The protective outer coating of claim 26, wherein said NITINOL alloy particles comprise a diameter of between about 50 microns and about .005 microns.

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28. The protective outer coating of claim 26, wherein said NITINOL<sup>®</sup> alloy particles comprise at least about 1.0% by volume of said base compound.

20 29. The protective outer coating of claim 26, wherein said NITINOL<sup>®</sup> alloy particles comprise between about 1.0% and about 50% by volume of said base compound.

25 30. The protective outer coating of claim 26, wherein said NITINOL<sup>®</sup> alloy particles comprise a spherical shape.

31. The protective outer coating of claim 26, wherein said NITINOL<sup>®</sup> alloy particles comprise an oval shape.

30 32. The protective outer coating of claim 26, wherein said a NITINOL<sup>®</sup> alloy particles comprise a cylindrical shape.

33. The protective outer coating of claim 26, wherein said NITINOL® alloy particles comprise a size of at least about 50 microns.

5 34. The protective outer coating of claim 26, wherein said NITINOL® alloy particles comprise a size of no more than about 0.005 microns.

35. The protective outer coating of claim 26, wherein said NITINOL® alloy particles comprise granules interspersed randomly and uniformly throughout said base compound.  
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36. The protective outer coating of claim 26, wherein said protective outer coating comprises a paint.